

The ♀ scale is smooth elongate oval $4\frac{1}{2}$ to 5 mm. long; 2 to 3 broad, and 2 high. Color variable, reddish brown, yellowish brown to a tinge of greenish brown, rounded dorsally without ridges forming an H though this character is found in the immature individuals. Antennae 8-jointed measuring in μ joint 1(56), 2(60), 3(84), 4(52) 6(36) 7(28) 8(56), joint 1 has one hair, 2, two; 3, three; 4 three; 5 two; 6 one; 7 two and 8 eight. Front leg: coxa 120 long; femur with trochanter 240; tibia 168; tarsus 88. Tarsal digitule 56 long. The outer margin of the skin after treatment with potash is much darker than the rest, and the entire surface tessellated, and thickly covered with oval gland orifices.

SAISSETIA FILICUM.

Lecanium filicum Boisd. 1868.

♀ Scale yellowish red brown to red brown, practically hemispherical, though some examples found at the ends of the small twigs and leaves of the food plants are somewhat elongate. The adult ♀ scale and young having one longitudinal and two transverse ridges forming a raised H marginally distinctly keeled. The longitudinal ridge has 4 minute raised round tubercles, and the entire scale more or less minutely pitted, surface somewhat shiny. Size 3 mm. in diameter and 2 mm. high.

Antennae 8-jointed in μ long 1(52) 2(48) 3(56) 4(44) 5(20) 6(24) 7(28) 8(40). Front leg: coxa 120; femur with trochanter 200; tibia 152; tarsus 88. The skin marginally dark ochereous thickly covered with large oval

gland orifices. The center and large portion of the skin colorless with the gland pits very indistinct.

It seems to the writer that the names of the above two species are misplaced. *S. filicum* should be called *S. hemisphaerica* and the latter *S. filicum*, owing to the fact of *S. filicum* as it now stands is a hemispherical shaped species, while *S. hemisphaerica* is an elongate oval one. Indeed it seems as though *S. filicum* was the one originally described as *L. hemisphaericum*. The marginal hairs of the four above species are all very similar with expanded ends which are more or less split interspersed with ordinary sharp spines without expanded ends or split. The lateral incisions of all are also of the same shape similar to a half oval.

Saissetia hemisphaerica was received from Prof. Cockerell, collected by him Aug., 1901, at La Galla, San Diego county, Calif., on pepper tree (*Schinus molle*), on *Cycas circinalis*, Trinidad (West Indies) from Dr. L. Reh, and on fern in greenhouses in Mass. Those of *S. filicum* were from ferns in greenhouses, Lawrence, Mass. collected by myself.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—XXIX.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Epelis truncataria Walker.

Egg. Elliptical, strongly flattened-concave, one end neatly truncate, the other slight-

ly depressed; shining pinkish gray, slightly iridescent. Reticulations strong, sharp, regularly hexagonal, resembling honey-comb at

the truncate end, arranged in nearly regular longitudinal rows for two-thirds the length, confused into normal reticulations at the depressed third; pits rather deep, well-marked. Length .7, width .5, height about .3 mm.

Stage I. Head rounded, erect, pale, yellowish, the sutures faintly and mouth brown, ocelli black. Body normal, short and thick, yellowish with distinct green tint and fine, discreet, purple brown lines, about as wide as the intervening spaces, dorsal (distinct on the cervical shield), subdorsal, lateral, stigmatal and fainter subventral ones. Shields all concolorous; tubercles obscure; setae short, stiff, black, enlarged at tips. Feet normal, pale. Shields faintly lined.

Stage II. Head round, erect, free, greenish luteous, mouth brown, eye black; smooth, shining; width .5 mm. Body normal, moderate, smooth, green with dorsal, subdorsal and lateral pulverulent, subgeminat, blackish bands and a single suprastigmatal one; subventral fold pale. Tubercles elevated, concolorous; setae short, dark, capitate. Shields undifferentiated. Thoracic feet faintly reddish, abdominal ones green. Subventral and ventral lines more dotted and broken, geminate, blackish.

Stage III. Head round, erect, broad, flat before, vertex slightly under joint 2; pale green, faintly brown shaded on the sides above the black ocelli; width .9 mm. Body robust, moderate, uniform, incisures not depressed, segments not elongate. Whitish

green, opaque; addorsal, subdorsal, lateral geminate crinkly blackish lines, darker green filled, uniform over the cervical shield but replaced by yellowish green on the anal plate; a single suprastigmatal line; subventer and venter yellowish green with two subventral and a single ventral greenish black lines. Tubercles black, minute; setae short. Feet pale, the abdominal ones very faintly lined.

Stage IV. Head rounded, erect, free; all leaf green; clypeus rather high, ocelli black; width 1.3 mm. Body rather short, as before. Green with the narrow blackish, double, pale-filled lines as before but both dorsally and ventrally practically alike. Subventral fold whitish. Feet green, the anal ones with triangular shields like the anal plate. No cervical shield. Tubercles small, concolorous, with short, pointed black setae. The lines are addorsal, subdorsal and lateral (substigmatal-subventral fold, not dark edged), subventral and adventral, all geminate, pale, almost whitish filled. Later the color pales and the lines look whitish with dark green edges. Subventral fold white; dorsal incisures folded, yellowish white. A short, robust larva, uniform, the segments not elongate.

Food plant, bearberry (*Arctostaphylos uva ursi*).

Eggs from a female taken on the summit of the foothills back of Golden, Colorado (Chimney Gulch).

THE HATCHING OF EACLES IMPERIALIS.

BY CAROLINE G. SOULE, BROOKLINE, MASS.

Eggs of *Eacles imperialis* had a red line part of the way around the edge of each. As the larva developed this line became broken, and, on the day before hatching, showed the red dashes to be the dorsal tubercles of the

larva. This could be seen without a lens, but a fifteen-diameters glass showed also the setae at the top of each tubercle, those on the four tubercles over the head being black, the others white. When the larva hatched the red